



# 2015 Storm Spotter Training

National Weather Service  
Milwaukee/Sullivan, WI

[www.weather.gov/milwaukee](http://www.weather.gov/milwaukee)



[www.facebook.com/NWSMilwaukee](https://www.facebook.com/NWSMilwaukee)



[twitter.com/NWSMKX](https://twitter.com/NWSMKX)



# Main Objectives



**What do you report?**

**How do you report it?**





# Why Do We Need Spotters?



- You help us make warning decisions!
  - *Radars can't see everything*
  - *Reports "calibrate" what is on radar*
- Ground truth gets public attention
  - *You may save lives!*
- Spotter reports go into "Storm Data", official source of historical weather events



# What Do You Report?

When = Time

Where = Location

What = Condition

An Effective spotter report is timely, accurate and detailed.



# What Do You Report?

- Tornado
- Rotating Wall Cloud
- Wind Damage
- Hail
- Heavy Rainfall
- Flash Flooding
- Dense Fog
- Winter
  - *Amount of Glazing (Ice Accumulation from Freezing Rain)*
  - *Snowfall of one inch or more*
  - *Sleet*



# Hail

**Report any size!**

**Hailstones  $\geq 1$  inch generate  
Severe Thunderstorm Warnings**

**Use a coin or  
ball as a reference size  
How long did the hail last?  
30 seconds? 5 minutes?**



Hailstone Size	Measurement
Pea	1/4"
Marble	1/2"
Dime	7/10"
Penny	3/4"
Nickel	7/8"
Quarter	1"
Half dollar	1 1/4"
Golf ball	1 3/4"



# Thunderstorm Wind Gusts

**Report gusts  
≥ 40 mph**

**Report any  
damage and  
where it  
occurred**

**Gusts ≥ 58 mph require  
Severe Thunderstorm Warnings**

Estimated Wind Speed	Visual Cues
25-31 mph	Large branches in motion
32-38 mph	Whole trees in motion
39-54 mph	Twigs break off, hinders walking
55-72 mph	Large branches broken, damage to chimneys/TV antennas
73-112 mph	Removes shingles, trees uprooted, windows broken
133+ mph	Roofs torn off, weak buildings destroyed, large trees uprooted

# Tornadoes



Violently rotating column of air extending from base of convective cloud to the ground

Look for rotating dirt/debris at ground level to confirm a tornado!



What direction is tornado moving? Estimate its location.

Tornadoes do not touch down, they spin up below cloud base

Not all tornadoes have condensation funnels touching ground



# Rotating Wall Clouds



Low-hanging cloud at rain-free base of thunderstorm (back side)  
Slow, persistent rotation



Can precede a tornado, usually  $\frac{1}{2}$  to 3 miles wide  
Changes shape, size and color with time

# Funnel Clouds



Do not come in contact with the ground or create debris!  
They are *a/ways* rotating!



Caution: Scud clouds often resemble funnel clouds. Moving, but without persistent rotation! Often found within rotating wall clouds.



# Flooding

Flash Flood = Flooding occurs in less than 6 hours.  
Heavy Rainfall = 1+ inch/hour.



**How deep is the water?  
Water stationary  
or moving?**



# Urban Flooding



**How deep is the water?  
Over the curb or  
over the bumper?**



# Lightning

A large, bright blue lightning bolt strikes down from a dark, stormy sky, illuminating the scene. The bolt originates from the left and curves towards the right, ending in a series of smaller, branching strikes. Below the lightning, the dark silhouette of a city skyline is visible, including a prominent church spire on the left and a domed building on the right. The overall atmosphere is dramatic and intense.

**Only report lightning when damage or injuries occur.**



# Rainfall

Record to the nearest one hundredth of an inch (e.g. 0.01")



*Use a rain gauge!  
How much rain  
fell in how much  
time?  
2" rain  
Noon to 3 pm*



# Snowfall

Report to the nearest tenth of an inch (e.g. 1.2")

Measure in different locations and find the average

Snow depth = total amount of snow on ground  
New snowfall = amount since snow began to fall.  
The NWS measures every 6 hours





# Blizzard Conditions



**Sustained winds or frequent wind gusts of 35 mph or more, considerable falling and/or blowing snow which frequently reduces the visibility to  $\frac{1}{4}$  mile or less**



# Freezing Rain

**Always  
report!**

**Report ice accumulations  
to nearest tenth of an inch  
(i.e. 0.1")  
Report any damage**





# Sleet



**Sleet = small ice pellets**

**Record sleet the same way as snowfall (e.g. 0.1")**

# FOG

## Wisconsin's Deadliest Crash

7:21 AM, 11 Oct 2002

I-43 Southbound

Sheboygan County

(near Ozaukee Co line)

50 Vehicles damaged/destroyed

10 people died

39 injured

Fog reduced visibility





# **Waterspouts**

**Rotating column of air extending from cloud base to water surface.**



**Always over water! If it moves onshore, becomes a tornado!**  
**Most are much weaker than tornadoes**  
**Report the direction it is moving**

**East of Kenosha  
September 12, 2013**

Photo credit: Officer Michael Madsen of the Kenosha Police Department





# Send us your Report



twitter

facebook



**SPOTTER**  
NETWORK

[www.spotternetwork.org](http://www.spotternetwork.org)

**Remember, safety first!**  
**Make sure you are safe**  
**before reporting!**

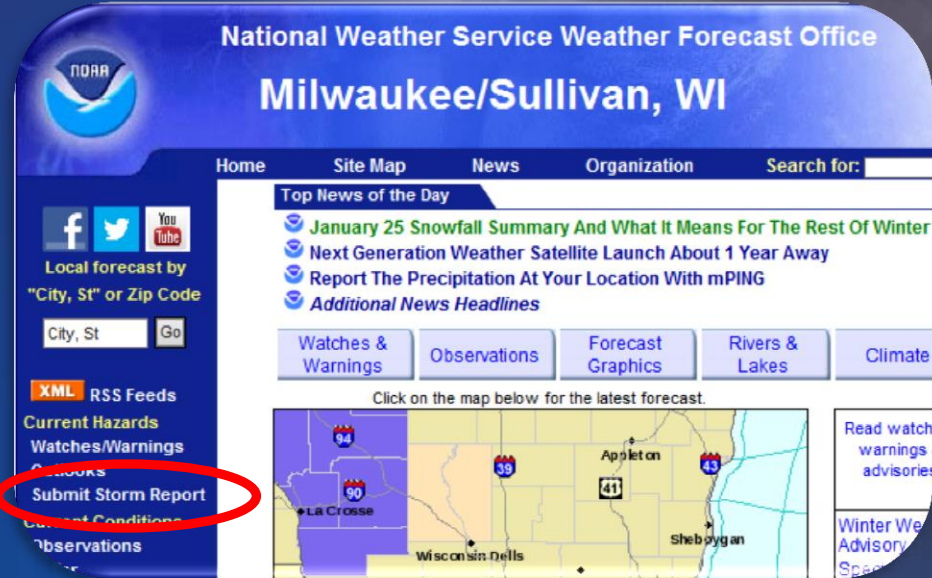


[www.weather.gov/mkx](http://www.weather.gov/mkx)

[w-mkx.webmaster@noaa.gov](mailto:w-mkx.webmaster@noaa.gov)



**911**





# One Stop Access to Submit Your Report!



[www.weather.gov/mkx](http://www.weather.gov/mkx)

Under Weather Safety Category in left-hand navigation menu, click: "Skywarn"

Choose which way you'd like to send your report to us!

National Weather Service Weather Forecast Office  
Milwaukee/Sullivan, WI

Home Site Map News Organization Search for:

Top News of the Day

- January 25 Snowfall Summary And What It Means For The Rest Of Winter
- Next Generation Weather Satellite Launch About 1 Year Away
- Report The Precipitation At Your Location With mPING
- Additional News Headlines

Watches & Warnings Observations Forecast Graphics Rivers & Lakes Climate

Click on the map below for the latest forecast.

Read watches, warnings & advisories

Winter Weather Advisory  
Special Weather Statement  
Hazardous Weather Outlook

Latest Conditions in Milwaukee, WI

Jan 26 12:52 pm 27°F (-3°C) Overcast

Weather Story Radar Satellite

Enhanced Hazardous Weather Outlook - Maximum Risk for Each Day (click enter site)

Today/Tonight Max. Risk Days 2

Severe Winter Fire Other

Local forecast by "City, St" or Zip Code

City, St Go

XML RSS Feeds

Current Hazards

Watches/Warnings

Outlooks

Submit Storm Report

Current Conditions

Observations

Radar

Satellite

Snow Cover

Snowfall Analysis

Precip Analysis

Social Dashboard

Forecasts

Forecast Discussion

Activity Planner

Aviation Weather

Fire Weather

Marine Weather

Severe Weather

Winter Weather

Hurricane Center

User Defined Area

Hydrology

Rivers & Lakes

Climate

Local

National

Drought

NOAA Climate Science

More...

Local Drought Info

Weather Safety

Preparedness

Weather Radio

StormReady

SkyWarn

Additional Info

Other Useful Links

National Weather Service Weather Forecast Office  
Milwaukee/Sullivan, WI

Home Site Map News Organization Search for:

Local forecast by "City, St" or Zip Code

City, St Go

XML RSS Feeds

Current Hazards

Watches/Warnings

Outlooks

Submit Storm Report

Current Conditions

Observations

Radar

Satellite

Snow Cover

Snowfall Analysis

Precip Analysis

**MKE SkyWarn Spotter Page**

2015 Severe Weather Spotter Training Schedule

**Submit Storm Reports**

Your options:

- Use Twitter. We can be reached at "@NWSMKX"
- Post it on our Facebook page: <http://www.facebook.com/US.NationalWeatherService.Milwaukee.gov>
- Via our office Form Submission page: [Severe Weather Report Form](#)
- Send us an email with your report: [w-mkx.webmaster@noaa.gov](mailto:w-mkx.webmaster@noaa.gov)



**Tweet us @NWSMKX**  
<https://twitter.com/NWSMKX>

**Can use #swiwx**  
(Southern Wisconsin Weather)

**Make sure you include:**  
**Time** (when), **Location** (where),  
**Condition** (what weather)

**Have confidence in your report! Unsure? Don't report!**

**Pictures are always welcome!**







# More About



- **Take your Twitter report to the next level using:**
  - **Hashtags: #wxreport and #swiwx**
  - **Turn on geo-tagging through a 3<sup>rd</sup> party Twitter application for your account.**
  - **If you do not have geo-tagging, submit your location:**
    - Your county, city and street intersection
    - OR Your location from the nearest downtown & county (i.e. 3 SE Sullivan, Jefferson County)
    - OR Lat/lon in degrees and decimal degrees





# Example Tweets



- **Severe Weather:**

**@nwsmkx 714PM Brookfield Waukesha cnty 1" Hail  
#swiwx**

**@nwsmkx 820PM 2NW Wales Waukesha cnty  
TORNADO movg E #swiwx**

**@nwsmkx 910PM Madison Dane cnty M65mph wind  
gust #swiwx**

**@nwsmkx 1035 PM Jefferson Heavy rain, M1.50 in 1  
hr #swiwx**







**Post on our  
Facebook page:**  
[www.facebook.com/NWSMilwaukee](http://www.facebook.com/NWSMilwaukee)

**Include:**

**Time** (when), **Location**  
(where), and **Condition**  
(what weather)

**Have confidence  
in your report!**  
**Unsure? Don't report!**

**Pictures are  
always welcome!**



PEOPLE

17,511 likes

ABOUT

Facebook posts do not always reflect the most current information. For current official info, visit:  
<http://www.crh.noaa.gov/mkx>

<http://www.crh.noaa.gov/mkx>

Suggest Edits

PHOTOS

Post Photo / Video

Write something on this Page

**Enter report here,  
then click Post.  
Pictures highly  
encouraged!**

US National Weather  
Service  
Wisconsin  
32 mins ·

It's getting messy out there. Snow is moving into the east while freezing drizzle is filling in behind it to the west.

NATIONAL WEATHER SERVICE  
MILWAUKEE / SULLIVAN WEATHER FORECAST OFFICE

**Snow Nearing The Lake, Freezing Drizzle West**

Light snow is  
nearing the  
lakeshore  
communities

Accumulations up  
to 1" are expected  
across the area





# Other Ways To Report



- E-mail: [w-mkx.webmaster@noaa.gov](mailto:w-mkx.webmaster@noaa.gov)
- Dial 911 to contact law enforcement
  - *They can relay your report to us*
  - *(Use **only** for tornadoes, flash flooding, major wind damage)*





# New NWS Webpage coming soon



National Weather Service Weather Forecast Office  
**Milwaukee/Sullivan, WI**

Home Site Map News Organization Search for:  ☐ NWS ☐ All NOAA

**Top News of the Day**

- Near Record Cold Today
- Prepare for the Changeable Spring Weather
- Looking for CoCoRaHS volunteers
- Additional News Headlines

**Watches & Warnings** **Observations** **Forecast Graphics** **Rivers & Lakes** **Climate** **Marine**

Click on the map below for the latest forecast.

Read watches, warnings & advisories

Special Weather Statement  
Hazardous Weather Outlook

Last map update: Thu, Mar. 5, 2015 at 8:06:34 am CST

**Latest Conditions in Milwaukee, WI** Choose Your Front Page City

Mar 5  
7:52 am  
A Few Clouds  
**6°F**  
(-14°C)

Select A City:

**Weather Story** **Radar** **Satellite** **Weather Map**

NATIONAL WEATHER SERVICE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER WEATHER SAFETY INFORMATION CENTER NEWS SEARCH ABOUT

Local forecast by "City, ST" or ZIP code  
Enter location:    
[Location Help](#)

**News Headlines**

- Forecast Total Snowfall Graphic
- NOAA Weather Radio WVF48 Greylock remains off the air until further notice
- 2015 NOAA's "Weather in Focus" Photo Contest
- Proposed Changes to Icons On NWS Point Forecast Pages

**NWS Forecast Office Albany, NY**  
[Weather.gov > Albany, NY](#)

Current Hazards Current Conditions Radar Forecasts Rivers and Lakes Climate and Past Weather Local Programs

Click on the map below to zoom in.

Watches, Warnings & Advisories

Winter Weather Advisory  
Special Weather Statement  
Hazardous Weather Outlook  
Short Term Forecast

Last Map Update: Thu, Mar. 5, 2015 at 9:13:08 am EST

**by Hour Forecast** **Forecast** **Forecast** **Bulletins** **Discussion** **Storm Report**

**Hazard Briefing** **SKYWARN** **Climate** **Drought** **Air**

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# Want To Learn More?



- MetEd Website SKYWARN® Spotter Training
  - [https://www.meted.ucar.edu/training\\_course.php?id=23](https://www.meted.ucar.edu/training_course.php?id=23)

The screenshot shows the MetEd website interface. At the top, the 'MetEd' logo is on the left, and navigation links 'Sign Up', 'Have an account?', 'Sign In', and 'Donate' are on the right. The 'Sign Up' button is circled in red. Below the header is a navigation bar with links: HOME, EDUCATION & TRAINING, COMMUNITIES, RESOURCES, ABOUT, and MY METED. The main content area is titled 'Course Listing » Course Description'. It features a search bar and a 'Search' button. The course 'SKYWARN® Spotter Training' is highlighted with a thumbnail image. To the right of the thumbnail, it lists 'Languages: English', 'Completion Time: 2 hrs', and 'Topics: Convective Weather, Other'. Below this is an 'Enroll' button. Further right, an 'Average Score' box shows 'N/A'. Below the course title are tabs for 'Description', 'Objectives', 'Overview', and 'Additional Resources'. The 'Description' tab is active, showing a paragraph about the course. To the right of the course details is a 'What is a Course?' section, a 'Support Form' section with a 'Go' button, and a 'MetEd Use FAQ' link.

- Weather Spotter's Field Guide:
  - <http://www.nws.noaa.gov/om/brochures/SGJune6-11.pdf>





# Make Sure You Are Weather-Ready

Becoming a weather spotter is a start...

- Have a severe weather safety plan for home and work
- Have multiple ways to receive weather information, including:
  - NOAA Weather Radio
  - Weather app for your smart phone
- Do NOT rely on outdoor sirens alone!





# Help Spread the Word!



**Your organization can become  
a Weather-Ready Nation  
Ambassador**



- Promote WRN messages and themes
- Engage with NOAA on collaboration opportunities
- Share success stories of preparedness
- Serve as an example by educating employees on workplace preparedness

**For more information: [www.noaa.gov/wrn](http://www.noaa.gov/wrn)**





# The End



# Questions?

